

**WHAT THE SHELL TELLS IN AGLAJIDAE:
A NEW GENUS FOR *Aglaja felis* (OPISTHOBRANCHIA: CEPHALASPIDEA)**

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ABSTRACT

In the most recent molecular phylogeny of the Aglajidae, the Caribbean species *Aglaja felis* Marcus & Marcus, 1970 was transferred to the Japanese genus *Nakamigawaia* Kuroda & Habe in Habe, 1961 without justification or support. The assumed *N. felis* was used as the only representative of the genus in the phylogeny, which did not include the type species: *Nakamigawaia spiralis* Kuroda & Habe in Habe, 1961. The material determined as *A. felis* came from Bahamas, Papua New Guinea and Philippines and the conclusion was that they were a complex of species; the Indo-Pacific ones possibly new and all of them belonging to the genus *Nakamigawaia*. Nonetheless, a simple comparison of shells of the type species of *Aglaja* Renier, 1881 and *Nakamigawaia* with *A. felis*, shows remarkable and supra-specific differences. Thus, in absence of *N. spiralis*, *Nakamigawaia* would not be represented in the phylogeny of the Aglajidae, but a distinct taxa, distributed in the Caribbean and the Indo-Pacific. *Migaya* Ortea, Caballer & Espinosa new genus, is proposed to relocate *A. felis*. This genus is characterized by bearing sensorial bristles on the head, by its internal shell and supported by the molecular phylogeny. In the same phylogeny, the genus *Chelidonura* A. Adams, 1850 was fragmented in several independent clades, one of them, characterized by the shell bearing a crest in the protoconch. Two new species of this clade are described in this paper.

The shell can be very helpful to assign the right names in the Aglajidae and using it is recommended even in papers where the molecular techniques are applied. A visual analysis of the usefulness of the shell within the group is performed using the established phylogeny as a frame for comparison.

Key words: Mollusca, Gastropoda, systematics, *Migaya*, new genus, new species, Caribbean Sea.

RESUMEN

En la filogenia molecular mas reciente realizada sobre la familia Aglajidae, la especie caribeña *Aglaja felis* Marcus & Marcus, 1970 fue transferida al género japonés *Nakamigawaia* Kuroda & Habe en Habe, 1961 sin ninguna argumentación o soporte. La asumida como *N. felis* fue usada como el único representante del género en la filogenia, que no incluyó la especie tipo:

Nakamigawaia spiralis Kuroda & Habe en Habe, 1961. Dicho material provenia de Bahamas, Papua Nueva Guinea y Filipinas y la conclusión del trabajo fué que se trataba de un complejo de especies; las Indo-Pacíficas posiblemente nuevas y todas ellas pertenecientes al género *Nakamigawaia*. Sin embargo, una simple comparación de las conchas de las especies tipo de *Aglaja* Renier, 1881 y *Nakamigawaia* con la de *A. felis*, deja en evidencia grandes diferencias que las sitúan en géneros distintos. Por ello, en ausencia de *N. spiralis*, *Nakamigawaia* no estaría representada en la filogenia de Aglajidae sino un taxón distinto distribuido en el Caribe y en el Indo-Pacífico. Se propone *Migaya* Ortea, Caballer & Espinosa nuevo género para reubicar *A. felis*. Este género se caracteriza por presentar quetas sensoriales en la cabeza y por su concha interna, estando respaldada por los resultados de la última filogenia molecular publicada. Adicionalmente, en dicha filogenia el género *Chelidonura* A. Adams, 1850 es fragmentado en varios clados independientes, uno de los cuales se caracteriza por su concha interna, la cual presenta una cresta en la protoconcha. En este trabajo se describen dos especies nuevas de dicho clado.

La concha es un caracter muy útil para asignar nombres en aglájidos y usarlo es recomendable incluso en artículos en los que se aplican técnicas de biología molecular. Por ello, se aborda un análisis visual de la utilidad de la concha dentro de la Familia, usando la filogenia establecida como marco de comparación.

Palabras clave: Mollusca, Gastropoda, sistemática, *Migaya*, nuevo género, nuevas especies, mar Caribe.

1. INTRODUCTION

Aglaja felis Marcus & Marcus, 1970, is a little black-coloured sea slug originally described from the Caribbean Sea. Prior to 2014, *Nakamigawaia* Kuroda & Habe in Habe, 1961 was considered monotypic and endemic to the south east coast of Japan. In the latest molecular phylogeny of the Aglajidae Pilsbry, 1895 owed to CAMACHO-GARCÍA, ORNELAS-GATDULA, GOSLINER, & VALDÉS (2014), these authors transferred *A. felis* to the genus *Nakamigawaia* with no explanation or support. “*N. felis*” was used as the only nominal representative of *Nakamigawaia* and was recorded from Bahamas, Papua New Guinea and Philippines (CAMACHO-GARCÍA *et al.* 2014. Accordingly, the genus “*Nakamigawaia*” represented by *A. felis*, resulted in a complex of 3 clades: one including specimens from Bahamas, other including specimens from the Indo-Pacific (possibly composed of two distinct species) and the last including two specimens determined as *Melanochlamys* sp. 1. *Nakamigawaia spiralis* Kuroda & Habe in Habe, 1961, described from Japan, is the type species of the genus *Nakamigawaia*, but it was not included in the phylogeny of the family (CAMACHO-GARCÍA *et al.* 2014). A simple comparison of *A. felis* with *N. spiralis* (not performed by CAMACHO-GARCÍA *et al.*, 2014), reveals that they can’t belong to the same genus. *Migaya* Ortea, Caballer & Espinosa, new genus, is described in this paper to relocate *Aglaja felis*.

In the same phylogeny, CAMACHO-GARCÍA *et al.* (2014) found several different clades formerly belonging to the genus *Chelidonura* A. Adams, 1850, two of them in the Caribbean. The existence of these clades is consistent with the proposal of two different lineages of *Chelidonura* in the Caribbean proposed by ORTEA, ESPINOSA, CABALLER, MORO & BACALLADO (2012). One of this clades, includes the type species of the genus, *Chelidonura hirundinina* (Quoy & Gaimard, 1833), the other is distinguished by bearing a crest in the protoconch of the shell, and includes *C. pusilla* Ortea, Moro & Espinosa, new species, and *C. quadrata* Ortea, Caballer & Espinosa, new species, described in this paper.

The external anatomy and coloration are not typically valid characters to distinguish species in the Aglajidae (ORNELAS-GATDULA, DUPONT & VALDÉS, 2011; ORNELAS-GATDULA & VALDÉS, 2012; ORNELAS-GATDULA, CAMACHO-GARCIA, SCHRÖDL, PADULA, HOOKER, GOSLINER & VALDÉS, 2012). Thus, to warrant the correct use of the names (even in molecular papers), the characters of the species used must be consistent with their original descriptions. Select the correct ones depending on the family is a heavy matter. However, the shell has been proposed to be a valid systematic character to distinguish taxa and to assign the correct names (ORTEA *et al.*, 2012). The usefulness of the shell to distinguish genus within the Aglajidae, is visually analyzed in the frame of the phylogeny performed by CAMACHO-GARCÍA *et al.* (2014).

2. MATERIAL AND METHODS

The specimens of *A. felis* were captured by hand from the intertidal to 6 m depth, from 1981 to 2013, in several localities covering the whole extension of the Caribbean Sea: Cuba, Mexico, Costa Rica, Venezuela and Guadeloupe. The specimens of *C. pusilla* Ortea, Moro & Espinosa, new species, and *C. quadrata* Ortea, Caballer & Espinosa, new species, were captured by hand between 1 and 6 m depth, in sandy bottoms in Cuba. They were photographed alive (when possible) and data were taken on behavior, anatomy and coloration. Afterwards, the animals were preserved in ethanol 96 %. To compare them with other Aglajidae, diagrams and photos were made of the internal shell using an Olympus SZ16 stereomicroscope and Nikon cameras.

For the comparison of the shells within the different clades in the Aglajidae (Figure 6):

- 1.- The molecular phylogeny by CAMACHO-GARCÍA *et al.* (2014) was assumed as the correct frame.
- 2.- The identity of the species given by CAMACHO-GARCÍA *et al.* (2014) was assumed to be true in the most of the cases (see Table 1).
- 3.- Data on the species were obtained from supplementary material, original descriptions or recent papers (Table 1).
- 4.- No differences in the shell type were found between the members of the same clade, thus, only one shell, the typical one, is showed in Figure 6.
- 5.- When no data was available on the shell of one species, it was considered to have the same kind than the rest of the clade.
6. When no data and no specific name were given by CAMACHO-GARCÍA *et al.* (2014) the specimen was considered to have the same kind of shell than the rest of the clade on which it was included. If these specimens belonged to a separate clade they were marked with a red question mark and each case was treated differently.

- 7.- Each terminal clade with different kind of shell was identified with a single genus. When incongruences were found between clades that share species that were previously considered to belong to the same genus, the type species determined the true generic identity of the clade.
- 8.- Five clades were found lacking a formal generic name (after the descriptions in this paper): Gen 1-5. No data at all was available for the Gen 1.
- 9.- The shells of the three genus not considered by CAMACHO-GARCÍA *et al.* (2014) are shown in Figure 6 in separated and unrelated lines.

A formal reconstruction of ancestral characters in the Aglajidae could not be performed due to the lack of data on the real specimens used by CAMACHO-GARCÍA *et al.* (2014).

Abbreviations:

IES, Instituto de Ecología y Sistemática, Havana, Cuba.

JC, Jesus Ortea's collections, Noreña, Asturias, Spain.

JEC, José Espinosa's collections, Havana, Cuba.

LC, Leopoldo Moro's collections, La Laguna, Tenerife, Canary Islands, Spain.

MC, Manuel Caballer collections, Boo de Pielagos, Cantabria, Spain.

MNHN, Muséum National d'Histoire Naturelle, 55 rue de Buffon, 75005 Paris, France.

3. SYSTEMATICS

Order CEPHALASPIDEA Fischer, 1883

Family AGLAJIDAE Pilsbry, 1895

Genus *Migaya* Ortea, Caballer & Espinosa new genus

Type species: *Aglaja felis* Marcus & Marcus, 1970: *Studies on the Fauna of Curaçao and other Caribbean island* 33: 9-10, figs. 1-3. Type locality: Majimo Reef, La Parguera, Puerto Rico.

Diagnosis: (Figure 6, B.2) Head bearing sensorial bristles. Internal shell simple, with a wing in the upper edge. Teleoconch vestigial, reduced to an arched and narrow plate attached to the protoconch ("wing"), which crosses the visceral region. Protoconch is smooth, strong and proportionally big, on the right side of the animal. See *Migaya felis* new comb. for further description.

Etimology: *Migaya*, in the Cantabrian-Asturian language means crumb, small, fragmented, breadcrumb, referring to the size of the shell of *Migaya felis* new comb., whose protoconch detaches as a crumb.

Remarks: In the most recent approach to the classification of the Aglajidae, CAMACHO-GARCÍA *et al.* (2014) transferred *A. felis*, one of the most common species in the Caribbean, to the genus *Nakamigawaia* in absence of data to support that nomenclatural act or any discussion. This authors clustered their specimens from Bahamas (*A. felis*), the Indo-Pacific "felis" and the "*Melanochlamys* spp" used by ANTHES, SCHULENBURG & MICHIELS (2008), under the name *N. felis*, may be because they found external resemblances with *N. spiralis*?. They didn't provide any data on the specimens.

In 1992 Gosliner determined some specimens from Hawaii as *N. felis* (PITTMAN & FIENE, 2014). Photos of these specimens are available online and, as it can be observed, their external appearance and their shells are really similar to the shell of “felis” from the Caribbean. But the external anatomy and coloration are not typically valid characters to distinguish species in the Aglajidae (ORNELAS-GATDULA, DUPONT & VALDÉS, 2011; ORNELAS-GATDULA & VALDÉS, 2012; ORNELAS-GATDULA, CAMACHO-GARCIA, SCHRÖDL, PADULA, HOOKER, GOSLINER & VALDÉS, 2012; VALDÉS, ORNELAS-GATDULA & DUPONT, 2013). In consequence, it must have been the shell the reason why Gosliner (PITTMAN & FIENE, 2014) considered some Aglajidae from Hawaii conspecifics with *A. felis*, a species from the Caribbean. The motivation to transfer this species to a genus endemic to the south coast of Japan (*Nakamigawaia*), with only one species to that date (*N. spiralis*), with a radically different kind of shell (Figures 1 and 6) is unknown. Any support was given to this act, but we have to consider (in absence of other explanation) that CAMACHO-GARCÍA *et al.* (2014) followed him.

ANTHES *et al.* (2008) described a “sickle-shaped shell” and draw a sketch (ANTHES *et al.*, 2008: fig. 2) from their “temporary *Melanochlamys* sp.” (used by CAMACHO-GARCÍA *et al.*, 2014). This kind of shell would match with that of *A. felis* (Figure 1 C-E; REDFERN, 2013), but is really different from the shell of *N. spiralis* (Figure 1 I-J).

N. spiralis has been studied in Japan by several authors in the last 50 years (HABE, 1961; HABE 1975; BABA, 1985; HABE 2001; SASAKI, 2008), so, we can assume that if they illustrate always the same kind of shell with very little variations, this must be the shape it has. In addition, BABA (1985) studied the species in detail, so as SASAKI (2008); a specimen with a sickle-shaped shell as the one beared by *A. felis* would have been detected and illustrated or described.

CAMACHO-GARCIA *et al.* (2014) used four specimens of *A. felis* from Bahamas, which on their phylogeny appeared as a sister group with the two specimens of “*Melanochlamys* spp” from Australia (ANTHES *et al.*, 2008). This group was the sister group of the clade formed by the specimens of “*A. felis*” from Philippines and Papua New Guinea.

The facts are that, in their phylogeny, CAMACHO-GARCÍA *et al.* (2014) used several specimens of three different species from two different Oceans, with shared a “sickle-shaped shell” that match with the shell of *A. felis*, whose morphology is very constant (own data; REDFERN, 2013) and is shared by specimens from Hawaii determined by one of the authors (Gosliner: PITTMAN & FIENE, 2014). This type of shell is radically different from that of *N. spiralis*, from Japan, which is characterized by housing a lot of endemic fauna (OKUTANI, 2000).

The conclusion is that CAMACHO-GARCÍA *et al.* (2014) used three species from the same genus, but they didn’t belong to *Nakamigawaia*. Thus, *Nakamigawaia* wouldn’t be represented in their phylogeny and the clade of “*N. felis*” (formerly *A. felis*), very distant from *Aglaja* (Figure 6: A.2.1.2. part) would lack a formal name, which is proposed in this paper as *Migaya* Ortea, Caballer & Espinosa new genus. Accordingly, the position of *Nakamigawaia* within the Aglajidae remains to be clarified.

Migaya felis new comb., type species of the genus *Migaya* Ortea, Caballer & Espinosa new genus, has been included in the genus *Aglaja* Renier, 1881. But, the internal shell of the type species of *Aglaja* is composed by a reduced protoconch, from which it emerges a dextral haliotiform shell with remarkable growth striae (Figure 1 H). In the outer edge it bears a prominence where the concavity changes to form a wing-shaped callus. In the upper

edge, the shell forms a wide sinistral spiral: the big wing, in whose edge there is an almost-transparent membrane. This kind of shell is clearly different from the one in *Migaya felis* new comb.

BABA (1985) made a detailed anatomical revision of *Nakamigawaia spiralis*, type species of the genus *Nakamigawaia*, and gave complementary data to its original description, which was based solely on the internal shell (Figures 1 I–J): solid, very calcified on its posterior region, membranous in the anterior region, rolled in spiral, with three whorls, a longitudinal groove and lacking a visible protoconch in the apex of the spire. This shell, whose calcified region is illustrated by SASAKI (2008: Figure 13 E), is quite different from that found in *Migaya felis* new comb. (Figures 1 C–E). Additionally, an external characteristic that distinguishes *Migaya felis* new comb. from *Nakamigawaia spiralis* is the presence of sensorial bristles in the head or at the sides of the mouth (common in Aglajidae), absent in the Japanese species.

As it can be seen in Figure 6, the shell of *Migaya* Ortea, Caballer & Espinosa new genus, is unique within the Aglajidae.

***Migaya felis* (Marcus & Marcus, 1970) comb. nov.**

(Figure 1)

Material examined: More than 100 specimens 2–6 mm long alive, collected in sandy bottoms up to 6 m depth in: Quiebrahacha, La Habana, Jibacoa, Cayo Coco, María La Gorda, Golfo de Batabanó, Cienfuegos, Jardines de la Reina (Cuba) (JC, JEC); Puerto Morelos (Mexico) (JC); Manzanillo (Costa Rica) (JC); Mochima, La Tortuga (Venezuela) (MC) and Guadeloupe (MNHN).

Supplementary material: *Aglaja tricolorata* Renier, 1807, 1 specimen, 40 mm long alive, collected at night in a sandy-muddy bottom at 2 m depth, 8/04/2008, Arrecife, Lanzarote, Canary Islands, Spain (LC).

Description: Body usually black, rarely with white heather, very flexible and flattened, four times as long as wide (Figure 1 A–B). Cephalic shield occupies approximately the anterior 2/3 of the animal, with the anterior end bearing a narrow hyaline visor with maroon points. Anterior lobes black, with 5–6 white sensorial filaments (Figures 1 F–G), of which the innermost and the outermost are smaller. Posterior lobes rounded; equal in shape and proportions at rest, but the left lobe is up to twice as big as the right one when the animal moves. Internal shell amber-colored, with the protoconch in the right lobe and an arched plate, 450 µm long (in 4 mm long specimens), crossing the left one (Figures 1 C–E). REDFERN (2013: 727B & D) illustrates similar shells, 500 µm long, from Bahamas. Shell plate absent. Teleoconch reduced to a wing with fine oblique striae in the upper edge united to the larval shell. Protoconch rolled one and a half whorls, extended forward as a soft visor, with a dorsal apophysis strengthening the union with the shell plate. There is no anterior membranose plate in the shell. Protoconch splits up easily when dry.

Habitat: Inhabits sandy bottoms, from the shore to 6 m depth. Feeds on cypridacid ostracods (at least), a kind of prey not reported anteriorly in these animals.

Genus *Chelidonura* A. Adams, 1850

Type species: *Bulla hirundinina* Quoy & Gaimard, 1833

Shell: (Figure 6, A.2.1.1) Thick, oval, scoop-shaped, with remarkable growth lines and a wing in the upper edge, that ends in a small spike and do not surpass the protoconch. Teleoconch long, rounded, with a solid edge. Protoconch lacking spines or a crest, strong and proportionally big, separated from the shell by a callus.

Remarks: Head with sensorial bristles.

Clade “Crested” *Chelidonura*

Diagnosis: (Figure 6, A.2.3) Scoop-shaped, with remarkable growth lines and the shoulder of the teleoconch forming a “wing” proportionally big. Sometimes calcified. Protoconch with a remarkable and strong crest. The callus sometimes covers the protoconch entirely and part of the “wing”.

Species included: *C. mariagordae* Ortea, Espinosa & Moro, 2004, *C. africana* Pruvot-Fol, 1953, *C. juancarlosi* Ortea & Espinosa, 1998 and *C. berolina* Marcus & Marcus, 1970 ??.

Remarks: ORTEA *et al.* (2012) based on the morphology of the internal shell, pointed out the existence of two different evolutive lines within the genus *Chelidonura* in the Atlantic; one containing at least *C. hirundinina*, *C. cubana* Ortea & Martinez, 1997 and *C. hummelincki* (Marcus & Marcus, 1970) and the other one, grouping at least *C. africana*, *C. mariagordae* (*C. normani*) and *C. juancarlosi*. CAMACHO-GARCIA *et al.* (2014), based on the analysis of molecular data, found three monophyletic clades:

- A.2.1.1 (= *Chelidonura sensu stricto*), including *C. hirundinina* among many others.
- A.2.2 (part) (= Gen 3 in Figure 6), including several species from the Pacific.
- A.2.3 (= “Crested” *Chelidonura*), including species from the Atlantic: *C. mariagordae* (as *C. normani* Ornelas-Gatdula, Dupont & Valdés, 2011) + *C. africana* + *C. berolina* (?).

Thus, the “Crested” *Chelidonura* species are separated from other clades formerly included in *Chelidonura* by molecular evidence (CAMACHO-GARCIA *et al.*, 2014), and distinguished from them (*Chelidonura s.s.* and Gen 3) by the general shape of the shell, by the crest that bears in the protoconch and by the “wing” in the shoulder of the teleoconch.

Aglaja hummelincki, described from Puerto Rico, was redescribed by THOMPSON (1977) based in specimens from Jamaica. He gave a good account on its external anatomy and coloration. ORTEA, MORO & ESPINOSA (2007) considered *C. hummelincki* synonymous to *C. berolina*. Later, ORNELAS-GATDULA *et al.* (2011), under the principle of first reviser (?), transferred again *C. hummelincki* to the synonymy. They gave no data on the shell of *C. berolina*, which remains unknown. So, the latter species is tentatively considered within this clade, assuming that the name given by CAMACHO-GARCIA *et al.* (2014) is correct (see Material and methods). The synonymy of *C. hummelincki* needs to be clarified with specimens from the type locality.

***Chelidonura pusilla* Ortea, Moro & Espinosa new species**

(Figures 2-3)

Holotype: 2 mm long alive, deposited in IES (39-101). Type locality: Reparto Nautico, Havana, Cuba.

Material examined: 7 specimens, 2-6 mm long alive, collected in sandy bottoms up to 6 m depth in the type locality, July 1, 1999.

Etimology: *pusilla*, in Latin: dwarf, because of the small size of this species.

Description: Body flattened, black, with the anterior end of the head and the posterior end of the cephalic shield somewhat discolored. One specimen with some disperse white spots. Cephalic shield of the same length as the posterior end of the body, with 2 small triangular lobes. Internal shell white, calcified, with marked growth striae, filling the whole posterior half of the body (Figure 2 C). Shoulder wide. Small lobe of the shell extended over the posterior region of the body. Protoconch big, globose, with a crest, partially embedded in and reinforced by the teleoconch, which do not close the aperture.

Remarks: This is a gregarious species that was initially misidentified and mixed *Runcina prieta* Ortea, Moro & Espinosa, 2007. The calcified internal shell of *Chelidonura pusilla* Ortea, Moro & Espinosa, new species, is well developed and very complex considering the size (1-1.2 mm) (Figures 2 B and 3). Together with the small size of the body, the proportions and the shape of the shell distinguish *C. pusilla* from all the other members of the genus.

ORTEA *et al.* (2012) show the most of the shells of the species included in this clade, one of them strongly calcified (*C. juancarlosi*).

***Chelidonura quadrata* Ortea, Caballer & Espinosa new species**

(Figures 4-5)

Holotype: 3.5 mm long alive, deposited in IES. Type locality: Playa Pilar, Cayo Guillermo, Cuba, sandy bottom, 3 m depth.

Etimology: *Quadrata*, in Latin squared, by the quadrangular appearance of the shell.

Description: Body dark greyish brown, with some disperse opaque white spots and noticeable brilliant blue patches on the edge of the parapodia, on the sides of the front edge of the head and on the posterior lobes of the body. Posterior edge of the cephalic shield white, somewhat depressed in the middle, with the same proportions as the posterior region of the body. Posterior region of the body topped in two lobes; the left one sharper and much bigger than the right one (Figures 4 A).

Internal shell amber, slightly calcified, fragile, quadrangular (Figures 4 C and 5 C), occupying 1/3 of the posterior region of the body (Figure 4 D). Protoconch with a crest (Figures 4 E and 5 C-E) that is prolonged ventrally (Figure 5 D) and partially covers the inner side. Teleoconch shows mild growth lines and a wide shoulder (or “wing”) (Figure 5 F), laid on the posterior region of the body.

Remarks: Based on its external characters this species is somewhat related to *Aglaja unsa* Marcus & Marcus, 1969, from Brazil, but the shell of *A. unsa* has a wrinkled shoulder (MARCUS, 1970: pt. 1, fig. 2). These wrinkles are present even in the protoconch, which lacks the crest present in *Chelidonura quadrata* Ortea, Caballer & Espinosa, new species. In addition, the length of the cephalic shield in *A. unsa* is twice as big as the posterior region of the body, different from that of *C. quadrata*.

Within the species of the clade, *C. quadrata* shall be compared with these that bear a non-calcified shell. The internal shell of *C. africana* bears a protoconch with a crest prolonged ventrally, but the external morphology and coloration of the animal is different and the shell is stronger, bigger, with different shape and proportions. *C. mariagordae* bears certain external resemblance, but lacks the ventral prolongation of the crest and the proportions of the shell and the shoulder (“wing”) are quite different.

Internal shells of the remaining genus/clades within the Aglajidae

This comparison is based on the best information available (Table 1).

***Odontoglaja* Rudman, 1978**

Type species: *Odontoglaja guamensis* Rudman, 1978

Shell: (Figure 6) Oval, flattened, calcified, thick and strongly calcified, with a broad, elongate and curved wing in the upper edge. Teleoconch rounded, concave-flattened, at least twice as long as the protoconch, usually reinforced on the edge. Protoconch big, usually covered by the callus, which strongly joins it with the teleoconch, lacking spines or other processes.

Remarks: It has a radula.

***Melanochlamys* Cheeseman, 1881**

Type species: *Melanochlamys cylindrica* Cheeseman, 1881

Shell: (Figure 6, A.1) Rolled, opencoiled, inflated, rectangular with rounded edges, strongly calcified, with a broad, short and curved wing in the upper edge. Teleoconch remarkably concave, long and wide, with an extremely thin and fragile margin, remarkable growth striae and a spiral central groove, reinforced in the early whorl. Margin usually shows an indentation. Protoconch proportionally small, lacking spines or other processes. The callus does not join the protoconch with the teleoconch, so, because of the rolled shape of the shell, it looks like being separated. Remarks: It lacks a radula. It shows certain resemblance with Gen 4, that may be solved when new specimens and better information on the shell anatomy of its species are available.

***Aglaja* Renier, 1807 (Figure 6)**

Type species: *Aglaja tricolorata* Renier, 1807 (Figure 1 H)

Shell: (Figure 6, A.2.1.2: part) Opencoiled, rolled, inflated, slightly calcified, whitish, with a broad, elongate and curved wing in the upper edge. Teleoconch concave, very short, practically reduced to the “wing”, prolonged in a very short and inconspicuous anterior membranous plate, with a change of concavity and some growth striae. Protoconch vestigial, continued in a dextral haliotiform shell with remarkable growth striae (Figure 1 H).

Remarks: It lacks a radula.

***Navanax* Pilsbry, 1895 (Figure 6)**

Type species: *Strategus inermis* Cooper, 1862

Shell: (Figure 6, A.2.1.2: part) Rolled, flattened, elongated, partially calcified, with a narrow, long and curved calcified wing in the upper edge. Teleoconch membranose, translucent, non calcified, fragile and easy to split, long (see the two stages in Figure 6), with a slight groove at the end of the last whorl. Protoconch vestigial, white, calcified, covered by the callus.

Remarks: It lacks a radula. It shows certain resemblance with Gen 2 and Gen 5, that may be solved if new specimens and better information on the shell anatomy of the species is available.

***Philinopsis* Pease, 1860**

Type species: *Philinopsis speciosa* Pease, 1860

Shell: (Figure 6, B.1: part) Rolled, moderately flattened, strongly calcified, rounded to quasi-triangular with rounded edges, covered by some kind of vitreous barnish, with a broad, long and curved wing in the upper edge. Teleoconch concave, elongated and narrow, with growth striae and a spiral slight central groove. Margin becomes progressively thinner from the early whorl, but it doesn't look like fragile. Margin does not show an indentation or it is very slight. Protoconch small, lacking spines or other processes, covered by a callus. The callus does not join the protoconch with the teleoconch, it looks like being separated.

Remarks: It lacks a radula. Head lacking sensorial bristles (ORTEA *et al.*, 2007). This shell is certainly very similar to that of *Melanochlamys*. It shows certain resemblance with Gen 4, that may be solved when new specimens and better information on the shell anatomy of its species are available.

***Spinoaglaja* Ortea, Moro & Espinosa, 2007**

Type species: *Chelidonura petra* Marcus, 1976.

Shell: (Figure 6, B.1: part) Oval, scoop-shaped, completely calcified, with growth lines and a broad, long and curved wing in the upper edge that widely surpass the protoconch. Teleoconch long, rounded, with a solid edge. Protoconch vestigial, covered by a callus with two spines pointing backwards into the left lobe of the mantle.

Remarks: It lacks a radula. Head lacking sensorial bristles. Caudal lobes equal (ORTEA *et al.*, 2007). Includes 4 species (ORTEA *et al.* 2012; ORTEA *et al.* 2013). Only “*Spinoaglaja petra*” (see Table 1 and Discussion), was considered in the last phylogeny of the family by CAMACHO-GARCIA *et al.* (2014), who, despite of the differences in the shells, considered *Spinoaglaja* synonymous to *Philinopsis* given that they were close in the phylogeny. Indeed, these two genera are monophyletic only if other two terminal clades are included in the group (Gen 4 and Gen 5) (CAMACHO-GARCIA *et al.*, 2014). These two clades bear a different kind of shell than the rest. Given the separation of the 4 clades based on molecular evidences and the existence of a synapomorphy (as a different shell is) we propose the revalidation of the genus *Spinoaglaja*.

***Nakamigawaia* Kuroda & Habe, 1961**

Type species: *Nakamigawaia spiralis* Kuroda & Habe, 1961 (Figure 1 I-J)

Shell: (Figure 6) Planispirally opencoiled, solid, very calcified on its posterior region, membranous in the anterior region, with three whorls and a longitudinal groove. Teleoconch plate absent. Protoconch absent or vestigial, prolonged with a wing in the upper edge. That wing shows oblique growth striae and gets wider as it grows and rolls up.

Remarks: It lacks a radula. Head lacking sensorial bristles.

***Pseudophilina* Habe, 1976**

Type species: *Pseudophilina hayashii* Habe, 1976

Shell: (Figure 6) Quasi-spherical, scoop-shaped, completely calcified, and a broad, short and rounded wing in the upper edge. Teleoconch very wide, rounded, lacking a groove or an indentation, with a solid edge. Protoconch vestigial, covered by a callus, smooth.

Remarks: It has a radula (KITAO & HABA, 1982). The systematic position of this genus remains to be confirmed.

***Noalda* Iredale, 1936**

Type species: *Hydatina exigua* Hedley, 1912

Shell: (Figure 6) Bulloid, thin, truncate above, partly external, white with a yellow spiral band with wide reddish-brown edges (BURN & THOMPSON, 1998). Teleoconch rounded, not opencoiled, with slight growth striae.

Remarks: It lacks a radula. The systematic position of this genus remains to be confirmed.

4. DISCUSSION

As discussed, the phylogeny tackled by CAMACHO-GARCÍA *et al.* (2014) incurs in several assumptions that lead to a divergent approach in the relative position of some genera within the Aglajidae. This work also includes some Caribbean species, whose taxonomy is discussed herein, that could affect their conclusions:

- 1.- *Chelidonura normani*, from Bahamas, synonymized with the Cuban species *C. mariagordae* Ortea, Moro & Espinosa, 2004 by ORTEA *et al.* (2012), because of their identical internal shell, protoconch and coloration.
- 2.- *Philinopsis petra* (Marcus, 1976) described from Brazil and included originally in the genus *Chelidonura*. The distribution of this species reaches Guadalupe (ORTEA, ESPINOSA, CABALLER & BUSKE, 2012) but not Bahamas (the origin of the specimens used by CAMACHO-GARCÍA *et al.*, 2014), where there are two different species transferred to the genus *Spinoaglaja* by ORTEA, MORO & BACALLADO (2013) (see Table 1).
- 3.- *Philinopsis pusa* (Marcus & Marcus, 1966) was originally described as a member of *Aglaja*, it bears a calcified and squamous internal shell and it has never been re-

captured. The shell of this species is very different from the fragile and smooth shell of the species which inhabits Bahamas, *P. багаensis* Ortea, Moro & Espinosa, 2007, whose color variations have been studied VALDÉS *et al.* (2013) based solely in specimens from Stocking Island (Bahamas).

The shell has been the base for the taxonomy of mollusks (PONDER & LINDBERG, 1992; FURUHASHI *et al.* 2009) since LINNAEUS (1758) published the 10th edition of *Systema Naturae* and the zoological nomenclature started in 1758 (ICZN, 1999: article 3), but with the evolution of malacology as a science, new and diverse characters have been considered to establish the classification in different hierarchical levels (BOUCHET & ROCROI, 2005). The advent of the molecular biology applied to taxonomy has brought many benefits to the classification of Gastropods (i.e. GRANDE *et al.* 2008, WILLIAMS *et al.* 2010, BOUCHET *et al.* 2011), but the shell, when exists, remains as a good character to distinguish taxa in mollusks.

In aglajids, the shell has been considered to have taxonomic value by some authors (RUDMAN, 1974, ORNELAS-GATDULA *et al.* 2011), refused by others (GOSLINER, 1980) or proposed as a main anatomic character for the separation of genus and species (ORTEA *et al.* 2012). The delicate internal shells in the Aglajidae are difficult to extract (intact) and are easily damaged by fixation in formalin or bouin (very common in the pre-molecular period). This may be the reason why they were abandoned as a useful character (ORTEA *et al.* 2012).

If the shell is really a valid character to separate genera within the family Aglajidae, each genus should have a typical kind of shell. A visual and gross comparison of the shells of the different clades found by CAMACHO-GARCÍA *et al.* (2014) is shown in Figure 6. It is based in several assumptions that may contain some degree of error (see Materials and methods), the main of them is the specific determination given by CAMACHO-GARCÍA *et al.* (2014) to their specimens. Anyway, no species was found with a different kind of shell than the remaining in the same clade (see Material and methods: point 4). Consistently, the most of the previously established genera, and the one described in this paper, have a typical shell that allows alone to distinguish it from the rest of the members of the family. Only *Melanochlamys* and *Philinopsis* show shells that are difficult to distinguish between them, but we assume that other sinapomorphies must exist in their anatomy. The same is applicable to the unnamed clades (Gen 1?, Gen 2-5) with shells resembling those of other groups (Gen 2-Gen 5-? *Navanax*; *Melanochlamys*-*Philinopsis*-Gen 4; *Chelidomura*-?Gen 3). However, for each monophyletic clade (Figure 6) we observe terminal nodes with different kinds of shells.

Contemporary papers such as the one owed to GOSLINER (2011: Figures 2A-B), show the typical calcified shoulders and the smooth protoconchs in the shells of *Philinopsis falci-phallus* Gosliner, 2011 (Gen 2) and *Philinopsis coronata* Gosliner, 2011 (Gen 5), indeed members of different clades that we are not able to distinguish based only of their shells. In the other hand, this paper also shows the shells of *Chelidomura mandrora* Gosliner, 2011 (Gen 3) and *Chelidomura alisonae* Gosliner, 2011 (true *Chelidomura*), that we are now able to distinguish; the first one with an extended wing and the second one with this structure reduced, not surpassing the protoconch.

CAMACHO *et al.* (2014) discussed the possibility of a polyphyletic origin for the genus *Chelidomura*. On the contrary, we think that there are still many genera to be described in the family Aglajidae, with sinapomorphies that remain to be observed. This would be consistent with the idea of a *Chelidomura*-*Odontoaglaja* shell-type for an ancestral aglajid, with

only a certain number of paths to evolve from this shape. In such case *Noalda* and *Pseudophilue* would not be members of the family.

In synthesis, with the information available, the shell alone is not enough to distinguish all the different genus/clades within the Aglajidae, but is a good character to identify the members of the most of the described genera. Knowing that all the members of the same clade share a typical shell, better accounts on the characters of the specimens/species/genus are necessary to find new synapomorphies that will allow, together with the shell, to distinguish all the genera in the family. Some of these characters have been already identified: the radula and the sensorial whistles. Further studies including *Nakanigawaia*, *Noalda* and *Pseudophilue* are advisable to complete the knowledge on the Aglajidae.

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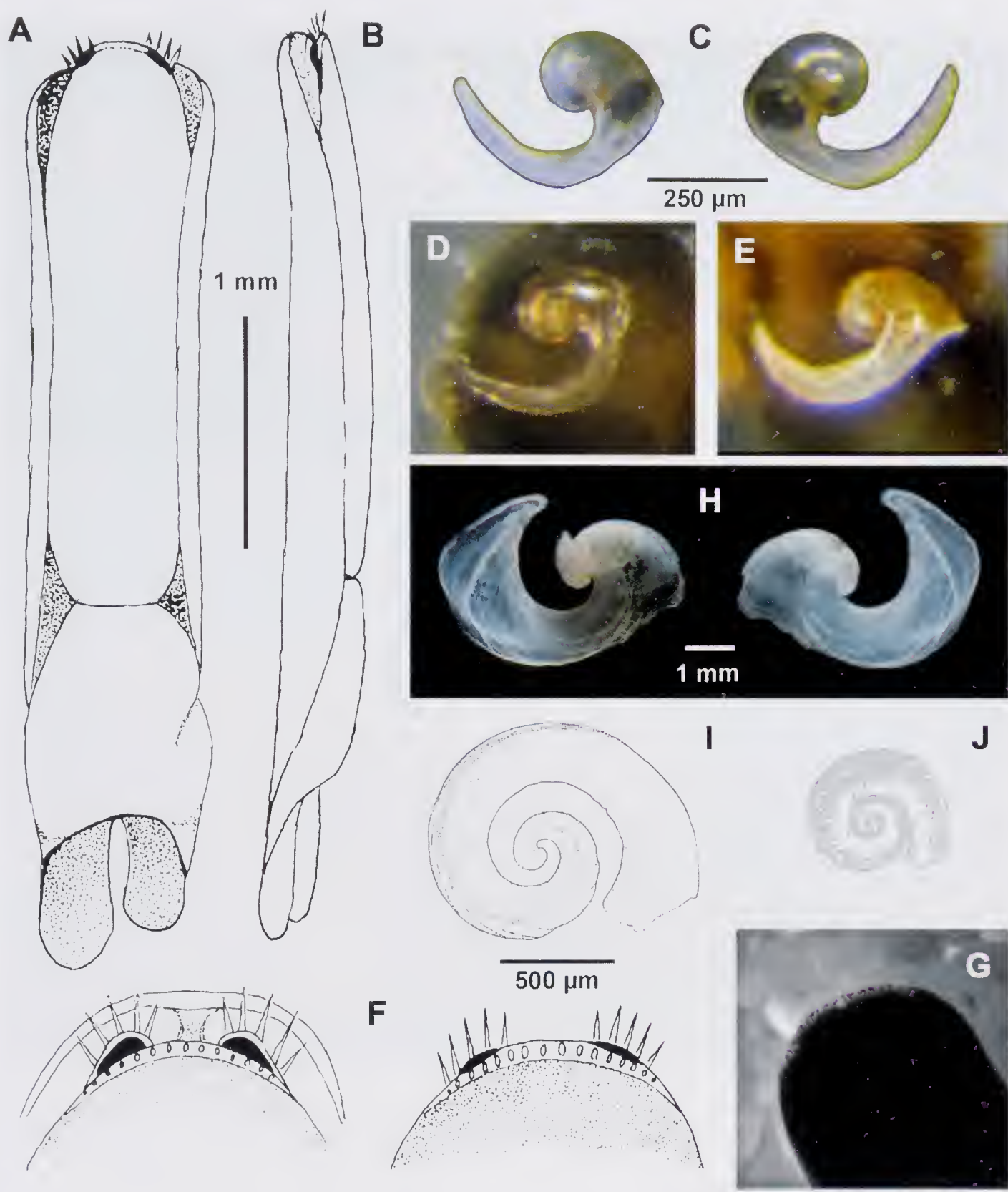


Figure 1.- *Migaya felis* (Marcus & Marcus, 1970) new comb. from the Caribbean (A - G). **A.** Dorsal view of the animal. **B.** Lateral view. **C.** Right and left side of the internal shell. **D - E.** Right side of the shell. **F.** Scheme of the sensorial bristles on the head. **G.** Sensorial bristles on the head. **H.** Internal shell of *Aglaja tricolorata* from the Canaries. *Nakamigawaia spiralis* Kuroda & Habe in Habe, 1961 from Japan (**I - J**). **I.** Scheme of the internal shell adapted from SASAKI (2008). **J.** Iconotype (KURODA & HABA IN HABA, 1961).

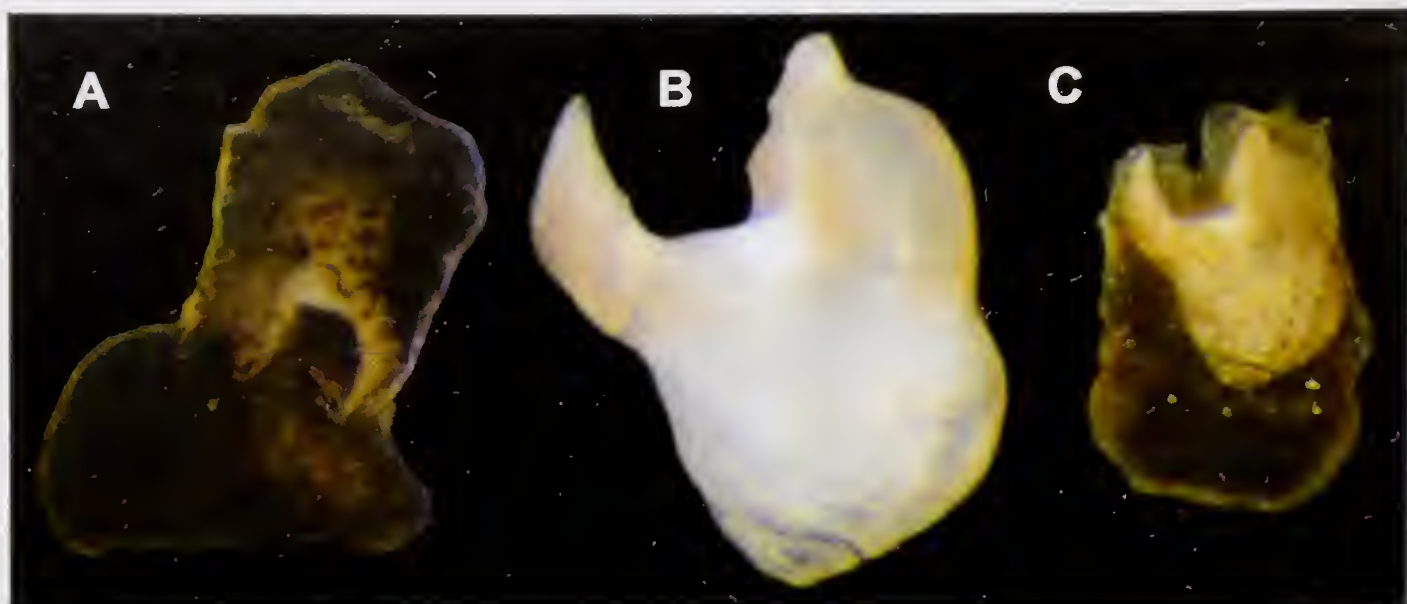


Figure 2.- *Chelidonura pusilla* Ortea, Moro & Espinosa new species, from Cuba: **A.** Shell in the fixed specimen. **B.** Shell in dorsal view. **C.** Shell in the posterior end of the specimen.

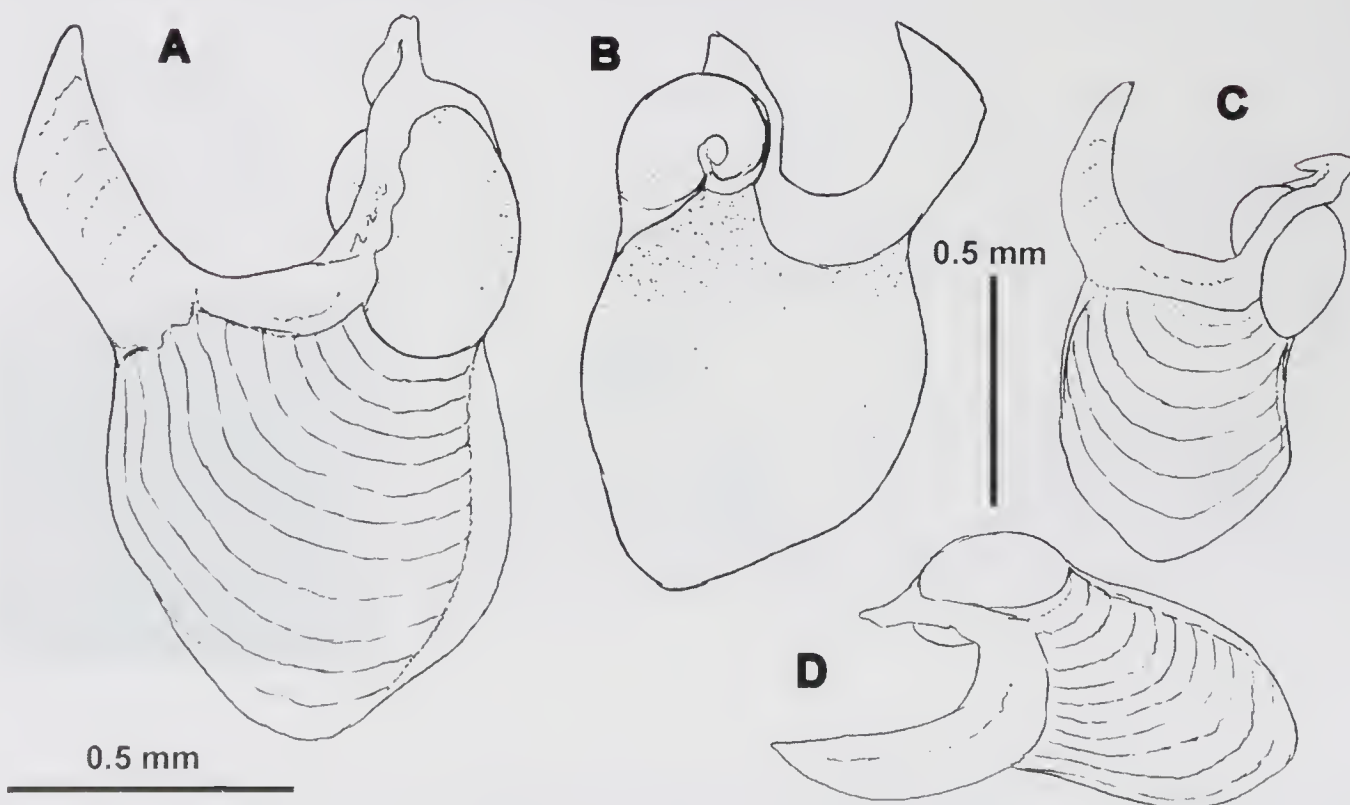


Figure 3.- *Chelidonura pusilla* Ortea, Moro & Espinosa new species, from Cuba, Shell: **A.** In dorsal view. **B.** In ventral view after the extraction. **C.** In dorso-lateral view. **D.** In dorso-lateral view.

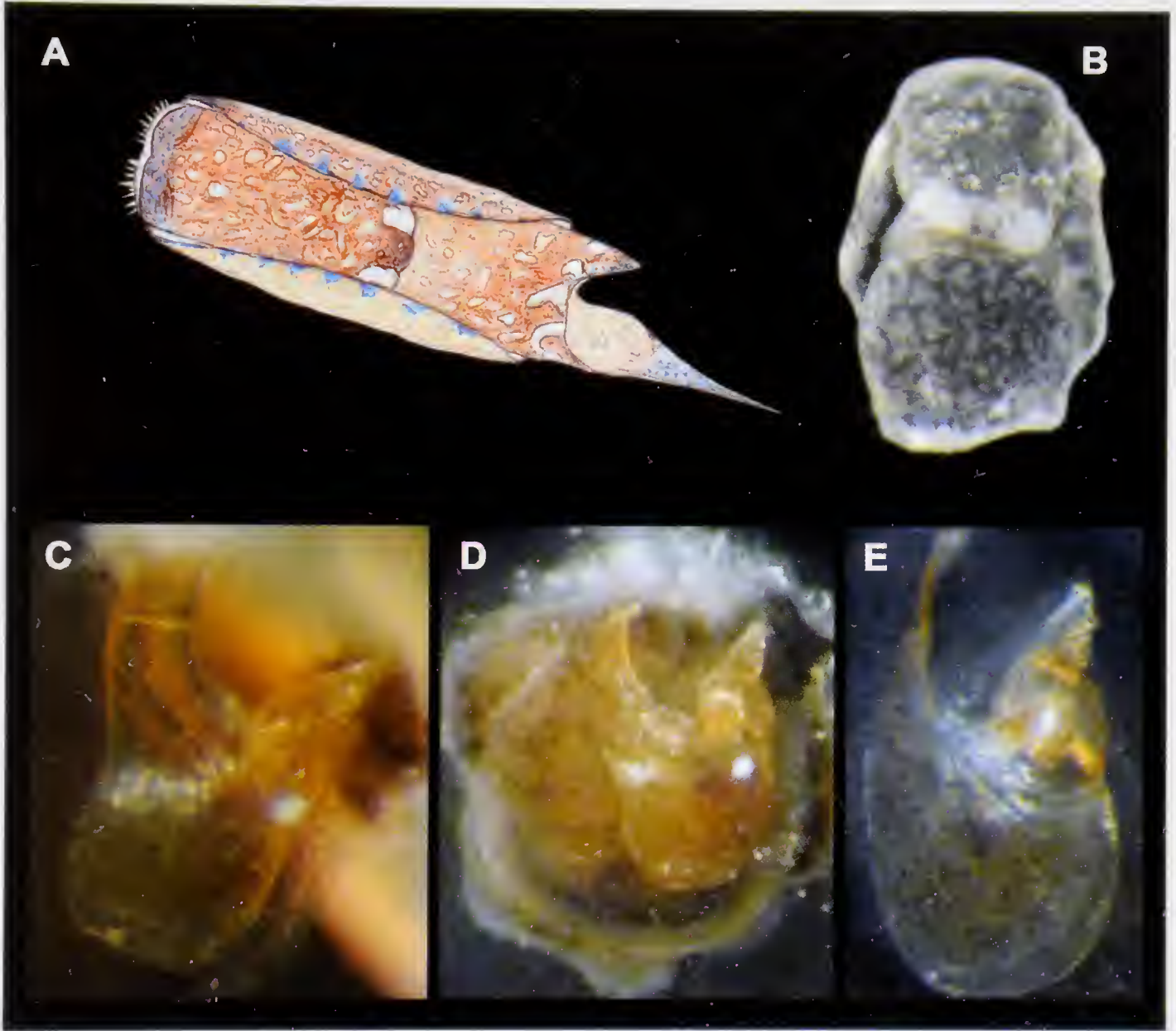


Figure 4.- *Chelidonura quadrata* Ortea, Caballer & Espinosa new species: **A.** Scheme of the Animal in dorsal view. **B.** Fixed specimen in dorsal view. **C-E.** Shell in dorsal view during the process of extraction.

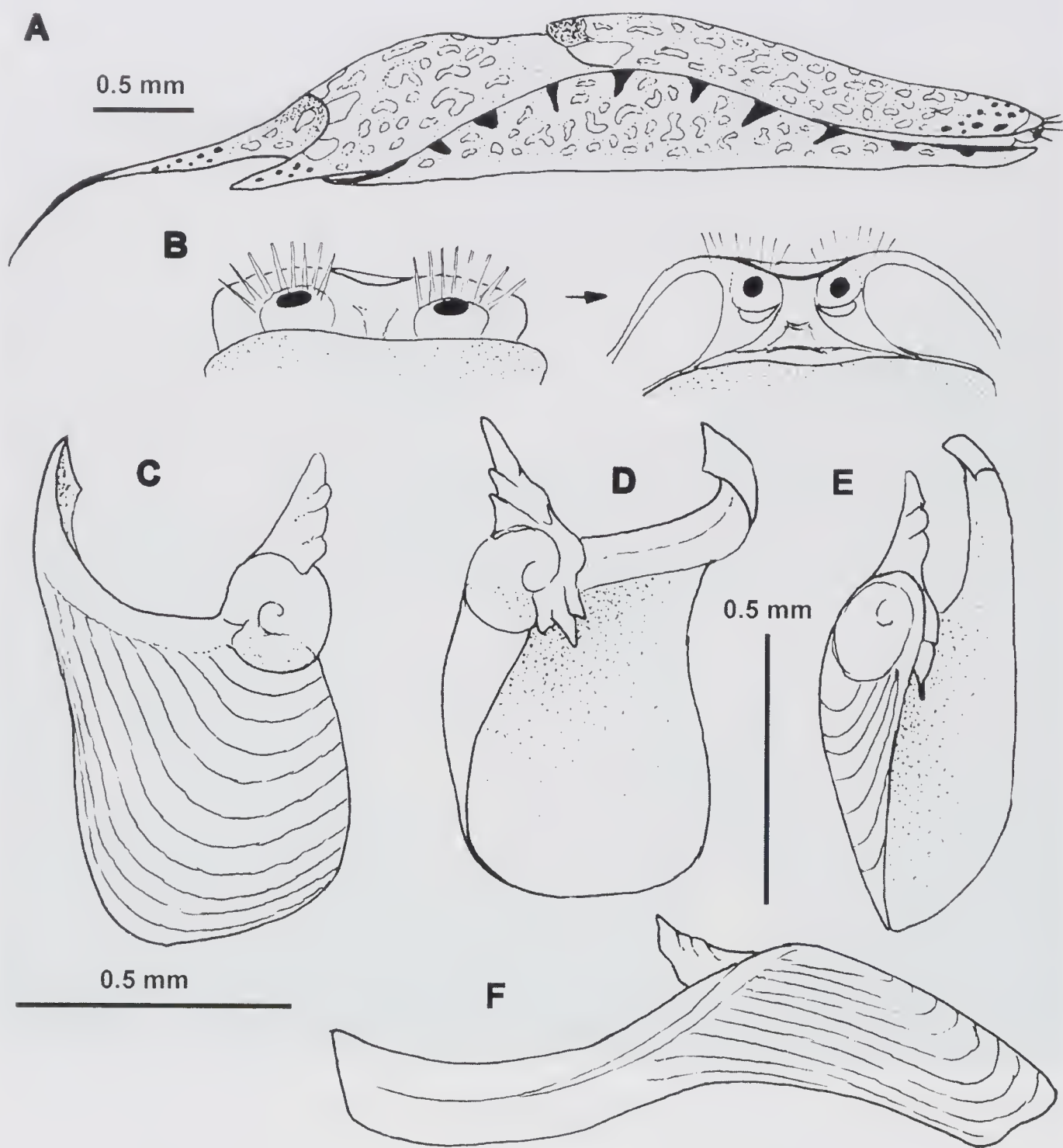


Figure 5.- *Chelidonura quadrata* Ortea, Caballer & Espinosa new species: **A.** Lateral view of the animal. **B.** Snout of the animal relaxed and in motion. **C.** Shell in dorsal view. **D.** Shell in ventral view. **E.** Shell in lateral view. **F.** Shell in lateral view.

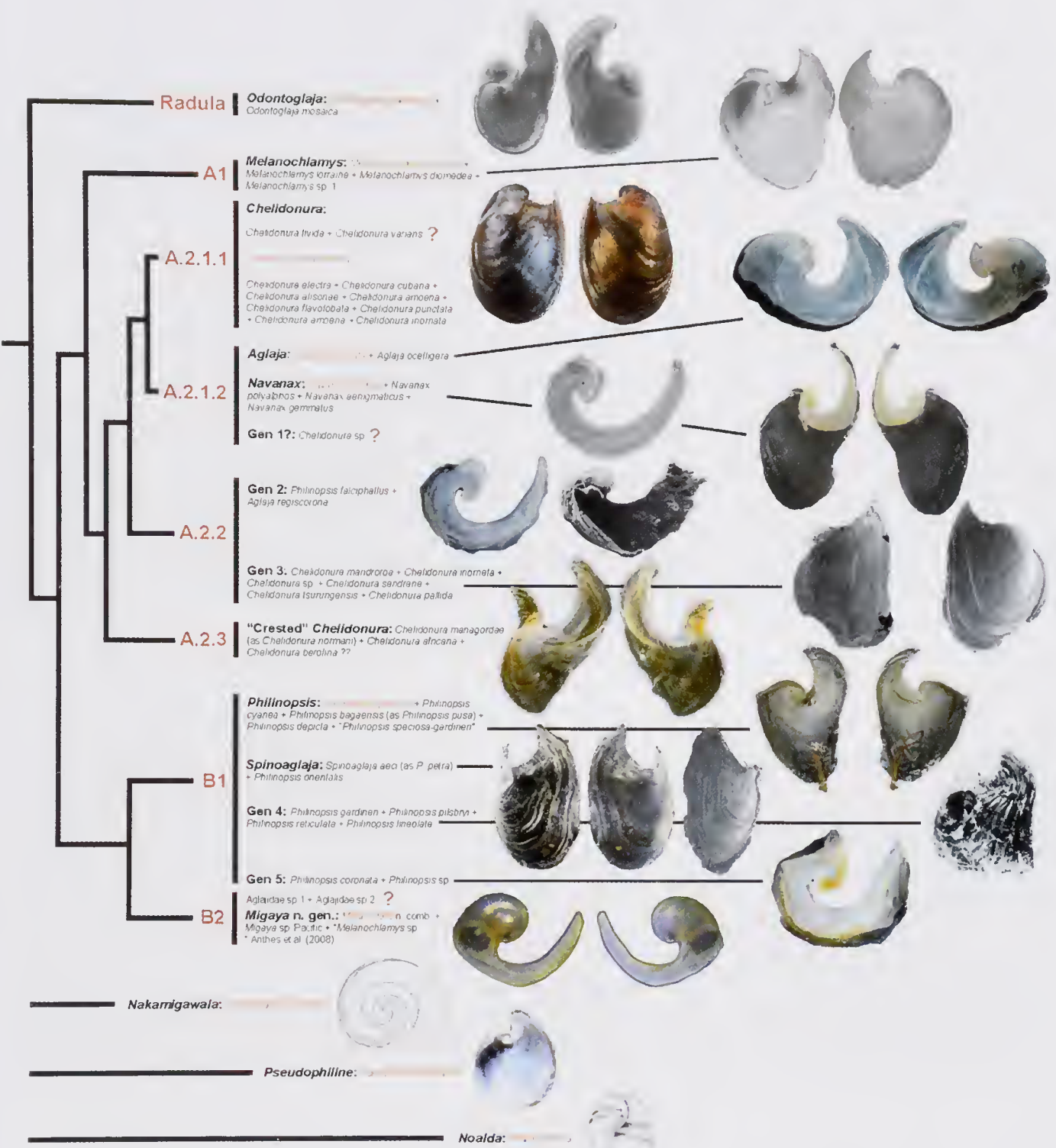


Figure 6.- Comparison of the shells within the different clades in the Aglajidae based on the molecular phylogeny of the family (CAMACHO *et al.*, 2014).

Table 1.- Data on the shells of the species from the phylogeny of the family (Camacho *et al.*, 2014) considered in this paper.

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	USA: California, San Diego	
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	USA: Southern California	
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	USA: Southern California	
<i>Aglaja regiscorona</i> Bertsch, 1972	<i>Aglaja regiscorona</i> Bertsch, 1972	Mexico: Baja California, Bahia Las Cruces	Bertsch (1972)
<i>Aglaja tricolorata</i> Renier, 1807	<i>Aglaja tricolorata</i> Renier, 1807	Italy: Giglio	Canary islands, this paper, Pruvot-Fol (1954), Martinez, Ballesteros, Avila, Dantart & Cimino (1993)
<i>Aglaja tricolorata</i> Renier, 1808	<i>Aglaja tricolorata</i> Renier, 1808	Spain: Golfo de Cadiz	Canary islands, this paper, Pruvot-Fol (1954), Martinez et al. (1993)
<i>Chelidonura africana</i> Pruvot-Fol, 1953	<i>Chelidonura africana</i> Pruvot-Fol, 1953	Portugal	Ortea <i>et al.</i> (2012)
<i>Chelidonura africana</i> Pruvot-Fol, 1953	<i>Chelidonura africana</i> Pruvot-Fol, 1954	Portugal	Ortea <i>et al.</i> (2012)
<i>Chelidonura africana</i> Pruvot-Fol, 1953	<i>Chelidonura africana</i> Pruvot-Fol, 1955	Portugal	Ortea <i>et al.</i> (2012)
<i>Chelidonura alisonae</i> Gosliner, 2011	<i>Chelidonura alisonae</i> Gosliner, 2011	USA: Hawaii, Maui, Heckili Point	Gosliner (2011)
<i>Chelidonura amoena</i> Bergh, 1905	<i>Chelidonura amoena</i> Bergh, 1905	Australia: Albrohlos Islands,	Willan & Cattaneo-Vietti (1995)
<i>Chelidonura amoena</i> Bergh, 1905	<i>Chelidonura amoena</i> Bergh, 1905	Japan: Okinawa, Ryukyu Islands	Willan & Cattaneo-Vietti (1995)
<i>Chelidonura amoena</i> Bergh, 1905	<i>Chelidonura amoena</i> Bergh, 1905	Philippines: Panglao, Bohol Island	Willan & Cattaneo-Vietti (1995)
<i>Chelidonura amoena</i> Bergh, 1905	<i>Chelidonura amoena</i> Bergh, 1905	Philippines: Panglao, Sungcolan Bay	Willan & Cattaneo-Vietti (1995)
<i>Chelidonura berolina</i> Marcus & Marcus, 1970	<i>Chelidonura berolina</i> Marcus & Marcus, 1970	Mexico: Yucatan	
<i>Chelidonura berolina</i> Marcus & Marcus, 1970	<i>Chelidonura berolina</i> Marcus & Marcus, 1970	Bahamas: GreatExuma, Stocking Island	
<i>Chelidonura berolina</i> Marcus & Marcus, 1970	<i>Chelidonura berolina</i> Marcus & Marcus, 1970	Bahamas: GreatExuma, Stocking Island	
<i>Chelidonura berolina</i> Marcus & Marcus, 1970	<i>Chelidonura berolina</i> Marcus & Marcus, 1970	Bahamas: GreatExuma, Stocking Island	
<i>Chelidonura berolina</i> Marcus & Marcus, 1970	<i>Chelidonura berolina</i> Marcus & Marcus, 1970	Bahamas: GreatExuma, Stocking Island	
<i>Chelidonura cubana</i> Ortea & Martinez, 1997	<i>Chelidonura cubana</i> Ortea & Martinez, 1997	Mexico: Yucatan	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Chelidonura cubana</i> Ortea & Martinez, 1997	<i>Chelidonura cubana</i> Ortea & Martinez, 1997	Mexico: Yucatan	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Chelidonura electra</i> Rudman, 1970	<i>Chelidonura electra</i> Rudman, 1970	Australia: Lizard Island	
<i>Chelidonura electra</i> Rudman, 1970	<i>Chelidonura electra</i> Rudman, 1970	Australia: SEQ, Mooloolaba	
<i>Chelidonura electra</i> Rudman, 1970	<i>Chelidonura electra</i> Rudman, 1970	Vanuatu: Espiritu Santo Island	
<i>Chelidonura flavolobata</i> Heller & Thompson, 1983	<i>Chelidonura flavolobata</i> Heller & Thompson, 1983	Egypt: Red Sea	
<i>Chelidonura flavolobata</i> Heller & Thompson, 1983	<i>Chelidonura flavolobata</i> Heller & Thompson, 1983	Egypt: Red Sea	

Name	Name given by Camacho-García <i>et al.</i> (2014)	Precedence (Camacho-García <i>et al.</i> , 2014)	Origin of data
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Australia: Lizard Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	USA: Palmyra Atoll: Sand Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Bahamas: Great Exuma, Stocking Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Bahamas: Great Exuma, Stocking Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Vanuatu: Espiritu Santo Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Philippines: Batangas, Anlao, Luzon Island	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	Redfern (2013)
<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	<i>Chelidonura hirundinina</i> (Quoy & Gaimard, 1832)	Madagascar: Iles Radama, Nosy Kalakajoro	Redfern (2013)
<i>Chelidonura mariagordae</i> Ortea, Espinosa & Moro, 2004	<i>Chelidonura normani</i> (Ornelas-Gatdula, Valdés & Dupont, 2011).	Bahamas: GreatExuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Chelidonura mariagordae</i> Ortea, Espinosa & Moro, 2004	<i>Chelidonura normani</i> (Ornelas-Gatdula, Valdés & Dupont, 2011).	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Chelidonura inornata</i> Baba, 1949	<i>Chelidonura inornata</i> Baba, 1949	Australia: Lizard Island	Lizard Island, Australia. A. Zamora
<i>Chelidonura inornata</i> Baba, 1950	<i>Chelidonura inornata</i> Baba, 1949	USA: Guam, Merizo	Lizard Island. Australia. A. Zamora
<i>Chelidonura inornata</i> Baba, 1951	<i>Chelidonura inornata</i> Baba, 1949	USA: Palmyra Atoll: Sand Island	Lizard Island, Australia. A. Zamora
<i>Chelidonura inornata</i> Baba, 1952	<i>Chelidonura inornata</i> Baba, 1949	Philippines: Luzon, Batangas, Maricaban Island	
<i>Chelidonura livida</i> Yonow, 1994	<i>Chelidonura livida</i> Yonow, 1994	Egypt: Red Sea	
<i>Chelidonura livida</i> Yonow, 1994	<i>Chelidonura livida</i> Yonow, 1994	Madagascar: Iles Radama, Nosy Faly	
<i>Chelidonura mandrooa</i> Gosliner, 2011	<i>Chelidonura mandrooa</i> Gosliner, 2011	Madagascar: Iles Radama, Nosy Valiha	Gosliner (2011)
<i>Chelidonura pallida</i> Risbec, 1951	<i>Chelidonura pallida</i> Risbec, 1951	Australia: Lizard Island	Lizard Island. Australia. A. Zamora
<i>Chelidonura punctata</i> Eliot, 1903	<i>Chelidonura punctata</i> Eliot, 1903	Madagascar: Iles Radama, Nosy Valiha	
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> Rudman, 1973	Philippines: Panglao	Lizard Island, Australia. A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> Rudman, 1973	Philippines: Panglao	Lizard Island, Australia. A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> Rudman, 1973	Papua New Guinea: Ajotau	Lizard Island, Australia. A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> “black” Rudman, 1973	Australia: Lizard Island	Lizard Island, Australia. A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> Rudman, 1973	Australia:LizardIsland	Lizard Island, Australia. A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1973	<i>Chelidonura sandrana</i> Rudman, 1973	Australia:LizardIsland	Lizard Island, Australia. A. Zamora

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Chelidonura sandrana</i> Rudman, 1974	<i>Chelidonura sandrana</i> Rudman, 1973	Papua New Guinea: Amphlett Group, Nabwageta Island	Lizard Island, Australia, A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1975	<i>Chelidonura sandrana</i> "black" Rudman, 1973	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	Lizard Island, Australia, A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1976	<i>Chelidonura sandrana</i> Rudman, 1973	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, A. Zamora
<i>Chelidonura sandrana</i> Rudman, 1977	<i>Chelidonura sandrana</i> "black" Rudman, 1973	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, A. Zamora
<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	Japan: Okinawa, Ryukyu Islands, Seragaki	
<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	Japan: Okinawa, Ryukyu Islands, Seragaki	
<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	<i>Chelidonura tsuringensis</i> Baba & Abe, 1959	Vanuatu: Espiritu Santo Island	
<i>Chelidonura varians</i> Eliot, 1903	<i>Chelidonura varians</i> Eliot, 1903	Australia: Lizard Island	
<i>Chelidonura varians</i> Eliot, 1904	<i>Chelidonura varians</i> Eliot, 1904	Australia: Lizard Island	
<i>Chelidonura varians</i> Eliot, 1905	<i>Chelidonura varians</i> Eliot, 1905	Papua New Guinea: Uama Island	
<i>Chelidonura varians</i> Eliot, 1906	<i>Chelidonura varians</i> Eliot, 1906	Philippines: Bohol Island, Panglao	
<i>Chelidonura varians</i> Eliot, 1907	<i>Chelidonura varians</i> Eliot, 1907	Philippines: Bohol Island, Panglao	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp. (as <i>Navanax</i> sp. in Gosliner <i>et al.</i> (2008))	USA: Hawaii, Maui, Malico Bay	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp.	Philippines: Luzon, Batangas, Mainit Bubbles	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp.	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	
Probably <i>Migaya</i> sp.	* <i>Melanochlamys</i> sp. 1 (probably <i>Nakamigawaia felis</i>)	Australia: Lizard Island	Anthes <i>et al.</i> (2008)
Probably <i>Migaya</i> sp.	* <i>Melanochlamys</i> sp. 1 (probably <i>Nakamigawaia felis</i>)	Australia: Lizard Island	Anthes <i>et al.</i> (2008)
<i>Melanochlamys</i> sp	<i>Melanochlamys</i> sp. 1PJK-2008	Northern Australia	
<i>Melanochlamys</i> sp	<i>Melanochlamys</i> sp. 1PJK-2008	Northern Australia	
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug, Morley, Asif, Hellyar & Blom (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Alaska, Cohen Island	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Alaska, Cohen Island	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: California, San Francisco	Steinberg & Jones (1960)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Migaya</i> sp.	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Papua New Guinea: Duperre Islets	Pittman & Fiene (2014)
<i>Migaya</i> sp.	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Philippines: Bohol Island, Panglao	Pittman & Fiene (2014)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Panama: Isla Uva	Eastern Pacific, this paper, Isla del Caño, Puntarenas, Costa Rica and Panama, A. Zamora

Name	Name given by Camacho-Garcia et al. (2014)	Procedence (Camacho-Garcia et al., 2014)	Origin of data
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Panama: Isla Uva	Eastern Pacific, this paper. Isla del Caño, Puntarenas, Costa Rica and Panama, A. Zamora
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Ballena National Park. Pta.Uvita	Eastern Pacific, this paper. Isla del Caño, Puntarenas, Costa Rica and Panama, A. Zamora
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Guanacaste, Playa Sámara	Eastern Pacific, this paper. Isla del Caño, Puntarenas, Costa Rica and Panama, A. Zamora
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Ballena National Park, El Tómbolo	Eastern Pacific, this paper. Isla del Caño, Puntarenas, Costa Rica and Panama, A. Zamora
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, A. Zamora, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, A. Zamora, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Jamaica: St. Ann Parish, St. Ann's Bay	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, A. Zamora, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Jamaica: St. Ann Parish, St. Ann's Bay	Isla de En medio and Arrecife Gallega, Veracruz, Mexico. A. Zamora, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, A. Zamora, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, A. Zamora, Redfern (2013)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Navanax inermis</i> (Cooper, 1862)	<i>Navanax inermis</i> (Cooper, 1863)	Mexico: Baja California	Los Angeles Bay, Baja California, Mexico, Punta Marzo, Bahía Octavia, Colombia. A. Zamora
<i>Navanax inermis</i> (Cooper, 1862)	<i>Navauax inermis</i> (Cooper, 1863)	USA: California; Long Beach	Los Angeles Bay, Baja California, Mexico, Punta Marzo, Bahía Octavia, Colombia, A. Zamora
<i>Navanax polyalphos</i> (Gosliner & Williams, 1972)	<i>Navanax polyalphos</i> (Gosliner & Williams, 1972)	USA: California; Long Beach	Gosliner & Williams (1972), Gosliner (1994)
<i>Navanax polyalphos</i> (Gosliner & Williams, 1972)	<i>Navanax polyalphos</i> (Gosliner & Williams, 1972)	Mexico: Bahía San Carlos	Gosliner & Williams (1972), Gosliner (1994)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Australia: Orpheus Island	Australia. A. Zamora, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Philippines: Luzon Island, Batangas	Australia, A. Zamora, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Malaysia: “Pinapple Point”	Australia, A. Zamora, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	USA: Guam, Merizo	Australia, A. Zamora, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	USA: Guam, Merizo	Australia, A. Zamora, Rudman (1978)
<i>Odontoghlaja mosaica</i> Gosliner, 2011	<i>Odontoghlaja mosaica</i> Gosliner, 2011	Madagascar: Iles Radama, Nosy Kalakajoro	Gosliner (2011)
<i>Philinopsis corouata</i> Gosliner, 2011	<i>Philinopsis corouata</i> Gosliner, 2011	Philippines: Luzon, Batangas, Mainit Point	Gosliner (2011)
<i>Philinopsis</i> cf. <i>ctenophoraphaga</i> Gosliner, 2011	<i>Philinopsis</i> cf. <i>ctenophoraphaga</i> Gosliner, 2011	Philippines: off shore Ambil Island	Gosliner (2011)
<i>Philinopsis cyanea</i> (Martens, 1897)	<i>Philinopsis cyanea</i> (Martens, 1897)	Ecuador: Galapagos Islands, Isabela Island, Tagus Cove	Yonow (1994), Rudman (2005)
<i>Philinopsis depicta</i> (Renier, 1807)	<i>Philinopsis depicta</i> (Renier, 1807)	Mediterranean	Spain, this paper. Pruvot-Fol (1954), Martinez et al. (1993)
<i>Philinopsis depicta</i> (Renier, 1807)	<i>Philinopsis depicta</i> (Renier, 1807)	Spain	Spain, this paper. Pruvot-Fol (1954), Martinez et al. (1993)

Name	Name given by Camacho-Garcia et al. (2014)	Precedence (Camacho-Garcia et al., 2014)	Origin of data
<i>Philinopsis falciphalus</i> Gosliner, 2011	<i>Philinopsis falciphalus</i> Gosliner, 2011	Philippines: Luzon, Batangas, Balayan Bay, Matotomngil Point	Gosliner (2011)
<i>Philinopsis falciphalus</i> Gosliner, 2011	<i>Philinopsis falciphalus</i> Gosliner, 2011	Philippines: Luzon, Batangas Bay, <i>Mainit Bubbles</i>	Gosliner (2011)
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	Australia: Lizard Island	
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	FijiIslands: Yasawa Group, Sawa-l-Lau	
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	USA: Guam, Merizo	
<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	Australia: Lizard Island	
<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	Australia: Lizard Island	
<i>Philinopsis orientalis</i> (Baba, 1949)	<i>Philinopsis orientalis</i> (Baba, 1949)	Marshall Islands: Kwajalein Atoll, Bigej-Meck reef	Okinawa, Japan, A. Zamora
<i>Philinopsis orientalis</i> (Baba, 1949)	<i>Philinopsis orientalis</i> (Baba, 1949)	Philippines: Luzon, Batangas, Maricaban Island, Bethlehem	Okinawa, Japan, A. Zamora
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja annea</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea et al. (2012), Redfern (2013)
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja annea</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea et al. (2012), Redfern (2013)
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja annea</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea et al. (2012), Redfern (2013)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Australia: Lizard Island	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Philippines: Luzon, Batangas, Balayan Bay, Seafari beach	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Vanuatu: Espiritu Santo Island	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Vanuatu: Espiritu Santo Island	Rudman (1972)
<i>Philinopsis bagensis</i> Ortea, Moro & Espinosa, 2007	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea et al. (2007), Ortea et al. (2012)
<i>Philinopsis bagensis</i> Ortea, Moro & Espinosa, 2008	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea et al. (2007), Ortea et al. (2012)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2009	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2010	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis reticulata</i> (Eliot, 1903)	<i>Philinopsis reticulata</i> (Eliot, 1903)	Australia: Lizard Island	
<i>Philinopsis reticulata</i> (Eliot, 1903)	<i>Philinopsis reticulata</i> (Eliot, 1903)	Australia: Lizard Island	
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Australia: Lizard Island	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Australia: Lizard Island	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Palau	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Papua New Guinea	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis speciosa</i> Pease, 1860	<i>Philinopsis speciosa</i> Pease, 1860	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, A. Zamora, Pittman & Fiene (2014a)
<i>Philinopsis</i> sp.	<i>Philinopsis</i> sp.	Philippines: Batangas, Mabini, Anilao Harbor	
Aglajidae species 1	Aglajidae species 1	Australia: Lizard Island	
Aglajidae species 1	Aglajidae species 1	Australia: Lizard Island	
Aglajidae sppcies 2	Aglajidae species 2	Australia: Lizard Island	
Aglajidae species 2	Aglajidae species 2	Australia: Lizard Island	Burn & Thompson (1998)
<i>Noalda exigua</i> (Hedley, 1912)			Okutani (2000)
<i>Pseudophilina hayashii</i> Habe, 1976			Sasaki (2008)
<i>Nakamigawaiia spiralis</i> Kuroda & Habe, 1961		USA: California, San Diego	
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	USA: Southern California	
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	USA: Southern California	
<i>Aglaja ocelligera</i> (Bergh, 1893)	<i>Aglaja ocelligera</i> (Bergh, 1893)	Mexico: Baja California, Bahia Las Cruces	Bertsch (1972)

Name	Name given by Camacho-Garcia et al. (2014)	Procedence (Camacho-Garcia et al., 2014)	Origin of data
<i>Aglaia tricolorata</i> Renier, 1807	<i>Aglaia tricolorata</i> Renier, 1807	Italy: Giglio	Canary islands, this paper, Pruvot-Fol (1954), Martinez, Ballesteros, Avila, Dantart & Cimino (1993)
<i>Aglaia tricolorata</i> Renier, 1808	<i>Aglaia tricolorata</i> Renier, 1808	Spain: Golfo de Cadiz	Canary islands, this paper, Pruvot-Fol (1954), Martinez et al. (1993)
<i>Chelidomura africana</i> Pruvot-Fol, 1953	<i>Chelidomura africana</i> Pruvot-Fol, 1953	Portugal	Ortea et al. (2012)
<i>Chelidomura africana</i> Pruvot-Fol, 1953	<i>Chelidomura africana</i> Pruvot-Fol, 1954	Portugal	Ortea et al. (2012)
<i>Chelidomura africana</i> Pruvot-Fol, 1953	<i>Chelidomura africana</i> Pruvot-Fol, 1955	Portugal	Ortea et al. (2012)
<i>Chelidomura alisonae</i> Gosliner, 2011	<i>Chelidomura alisonae</i> Gosliner, 2011	USA: Hawaii, Maui, Hekili Point	Gosliner (2011)
<i>Chelidomura amoena</i> Bergh, 1905	<i>Chelidomura amoena</i> Bergh, 1905	Australia: Albrolos Islands,	Willan & Cattaneo-Vietti (1995)
<i>Chelidomura amoena</i> Bergh, 1905	<i>Chelidomura amoena</i> Bergh, 1905	Japan: Okinawa, Ryukyu Islands	Willan & Cattaneo-Vietti (1995)
<i>Chelidomura amoena</i> Bergh, 1905	<i>Chelidomura amoena</i> Bergh, 1905	Philippines: Panglao, Bohol Island	Willan & Cattaneo-Vietti (1995)
<i>Chelidomura amoena</i> Bergh, 1905	<i>Chelidomura amoena</i> Bergh, 1905	Philippines: Panglao, Sungan Bay	Willan & Cattaneo-Vietti (1995)
<i>Chelidomura berolina</i> Marcus & Marcus, 1970	<i>Chelidomura berolina</i> Marcus & Marcus, 1970	Mexico: Yucatan	
<i>Chelidomura berolina</i> Marcus & Marcus, 1970	<i>Chelidomura berolina</i> Marcus & Marcus, 1970	Bahamas: Great Exuma, Stocking Island	
<i>Chelidomura berolina</i> Marcus & Marcus, 1970	<i>Chelidomura berolina</i> Marcus & Marcus, 1970	Bahamas: Great Exuma, Stocking Island	
<i>Chelidomura berolina</i> Marcus & Marcus, 1970	<i>Chelidomura berolina</i> Marcus & Marcus, 1970	Bahamas: Great Exuma, Stocking Island	
<i>Chelidomura berolina</i> Marcus & Marcus, 1970	<i>Chelidomura berolina</i> Marcus & Marcus, 1970	Bahamas: Great Exuma, Stocking Island	
<i>Chelidomura cubana</i> Ortea & Martinez, 1997	<i>Chelidomura cubana</i> Ortea & Martinez, 1997	Mexico: Yucatan	Ortea et al. (2012), Redfern (2013)
<i>Chelidomura cubana</i> Ortea & Martinez, 1997	<i>Chelidomura cubana</i> Ortea & Martinez, 1997	Mexico: Yucatan	Ortea et al. (2012), Redfern (2013)
<i>Chelidomura electra</i> Rudman, 1970	<i>Chelidomura electra</i> Rudman, 1970	Australia: Lizard Island	
<i>Chelidomura electra</i> Rudman, 1970	<i>Chelidomura electra</i> Rudman, 1970	Australia: SEQ, Mooloolaba	
<i>Chelidomura electra</i> Rudman, 1970	<i>Chelidomura electra</i> Rudman, 1970	Vanuatu: Espiritu Santo Island	
<i>Chelidomura flavolobata</i> Heller & Thompson, 1983	<i>Chelidomura flavolobata</i> Heller & Thompson, 1983	Egypt: Red Sea	
<i>Chelidomura flavolobata</i> Heller & Thompson, 1983	<i>Chelidomura flavolobata</i> Heller & Thompson, 1983	Egypt: Red Sea	
<i>Chelidomura hiruandina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruandina</i> (Quoy & Gaimard, 1832)	Australia: Lizard Island	Redfern (2013)
<i>Chelidomura hiruandina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruandina</i> (Quoy & Gaimard, 1832)	USA: Palmyra Atoll: Sand Island	Redfern (2013)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Bahamas: Great Exuma, Stocking Island	Redfern (2013)
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Bahamas: Great Exuma, Stocking Island	Redfern (2013)
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Vanuatu: Espiritu Santo Island	Redfern (2013)
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Philippines: Batangas, Anilao, Luzon Island	Rcdfem (2013)
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	Redfern (2013)
<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	<i>Chelidomura hiruudinina</i> (Quoy & Gaimard, 1832)	Madagascar: Iles Radama, Nosy Kalakajoro	Redfern (2013)
<i>Chelidomura mariagordae</i> Ortea, Espinosa & Moro, 2004	<i>Chelidomura normani</i> (Omelas-Gatdula, Valdés & Dupont, 2011)	Bahamas: GreatExuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Chelidomura mariagordae</i> Ortea, Espinosa & Moro, 2004	<i>Chelidomura normani</i> (Omelas-Gatdula, Valdés & Dupont, 2011)	Bahamas: GreatExuma, Stocking Island	Ortea <i>et al.</i> (2012), Rcdfem (2013)
<i>Chelidomura inornata</i> Baba, 1949	<i>Chelidomura inornata</i> Baba, 1949	Australia: Lizard Island	Lizard Island, Australia, this paper
<i>Chelidomura inornata</i> Baba, 1950	<i>Chelidomura inornata</i> Baba, 1949	USA: Guam, Merizo	Lizard Island, Australia, this paper
<i>Chelidomura inornata</i> Baba, 1951	<i>Chelidomura inornata</i> Baba, 1949	USA: Palmyra Atoll: Sand Island	Lizard Island, Australia, this paper
<i>Chelidomura inornata</i> Baba, 1952	<i>Chelidomura inornata</i> Baba, 1949	Philippines: Luzon, Batangas, Maricaban Island	
<i>Chelidomura livida</i> Yonow, 1994	<i>Chelidomura livida</i> Yonow, 1994	Egypt: Red Sea	
<i>Chelidomura livida</i> Yonow, 1994	<i>Chelidomura livida</i> Yonow, 1994	Madagascar: Iles Radama, Nosy Faly	
<i>Chelidomura mandrora</i> Gosliner, 2011	<i>Chelidomura mandrora</i> Gosliner, 2011	Madagascar: Iles Radama, Nosy Valiha	Gosliner (2011)
<i>Chelidomura pallida</i> Risbec, 1951	<i>Chelidomura pallida</i> Risbec, 1951	Australia: Lizard Island	Lizard Island, Australia, this paper
<i>Chelidomura punctata</i> Eliot, 1903	<i>Chelidomura punctata</i> Eliot, 1903	Madagascar: Iles Radama, Nosy Valiha	
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> Rudman, 1973	Philippines: Panglao	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> Rudman, 1973	Philippines: Panglao	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> Rudman, 1973	Papua New Guinea: Ajotau	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> “black” Rudman, 1973	Australia: Lizard Island	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> Rudman, 1973	Australia:LizardIsland	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1973	<i>Chelidomura sandrana</i> Rudman, 1973	Australia:LizardIsland	Lizard Island, Australia, this paper
<i>Chelidomura sandrana</i> Rudman, 1974	<i>Chelidomura sandrana</i> Rudman, 1973	Papua NewGuinea: Amphlett Group, Nabwageta Island	Lizard Island, Australia, this paper

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Chelidonura sandrana</i> Rudman, 1975	<i>Chelidonura sandrana</i> "black" Rudman, 1973	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	Lizard Island, Australia, this paper
<i>Chelidonura sandrana</i> Rudman, 1976	<i>Chelidonura sandrana</i> Rudman, 1973	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, this paper
<i>Chelidonura sandrana</i> Rudman, 1977	<i>Chelidonura sandrana</i> "black" Rudman, 1973	Vanuatu: Espiritu Santo Island	Lizard Island, Australia, this paper
<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	Japan: Okinawa, Ryukyu Islands, Seragaki	
<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	Japan: Okinawa, Ryukyu Islands, Seragaki	
<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	<i>Chelidonura tsurugensis</i> Baba & Abe, 1959	Vanuatu: Espiritu Santo Island	
<i>Chelidonura varians</i> Eliot, 1903	<i>Chelidonura varians</i> Eliot, 1903	Australia: Lizard Island	
<i>Chelidonura varians</i> Eliot, 1904	<i>Chelidonura varians</i> Eliot, 1904	Australia: Lizard Island	
<i>Chelidonura varians</i> Eliot, 1905	<i>Chelidonura varians</i> Eliot, 1905	Papua New Guinea: Uama Island	
<i>Chelidonura varians</i> Eliot, 1906	<i>Chelidonura varians</i> Eliot, 1906	Philippines: Bohol Island, Panglao	
<i>Chelidonura varians</i> Eliot, 1907	<i>Chelidonura varians</i> Eliot, 1907	Philippines: Bohol Island, Panglao	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp.(as <i>Navanax</i> sp.in Gosliner <i>et al.</i> (2008))	USA: Hawaii, Maui, Malico Bay	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp.	Philippines: Luzon, Batangas, Mainit Bubbles	
<i>Chelidonura</i> sp.	<i>Chelidonura</i> sp.	Indonesia: West Papua, Raja Ampat, Wayag Island, Wayag Bay	
Probably <i>Migaya</i> sp.	* <i>Melanochlamys</i> sp.1 (probably <i>Nakanigawaia felis</i>)	Australia: Lizard Island	Anthes <i>et al.</i> (2008)
Probably <i>Migaya</i> sp.	* <i>Melanochlamys</i> sp.1 (probably <i>Nakanigawaia felis</i>)	Australia: Lizard Island	Anthes <i>et al.</i> (2008)
<i>Melanochlamys</i> sp	<i>Melanochlamys</i> sp.1PJK-2008	Northern Australia	
<i>Melanochlamys</i> sp	<i>Melanochlamys</i> sp.1PJK-2008	Northern Australia	
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug, Morley, Asif, Hellyar & Blom (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys cylindrica</i> Cheeseman, 1881	<i>Melanochlamys cylindrica</i> Cheeseman, 1881	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Washington	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Alaska, Cohen Island	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: Alaska, Cohen Island	Steinberg & Jones (1960)
<i>Melanochlamys diomedea</i> (Bergh, 1893)	<i>Melanochlamys diomedea</i> (Bergh, 1893)	USA: California, San Francisco	Steinberg & Jones (1960)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Melanochlamys lorrainae</i> (Rudman, 1968)	<i>Melanochlamys lorrainae</i> (Rudman, 1968)	New Zealand: Northland	Krug <i>et al.</i> (2008)
<i>Migaya</i> sp.	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Papua New Guinea: Duperre Islets	Pittman & Fiene (2014)
<i>Migaya</i> sp.	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Philippines: Bohol Island, Panglao	Pittman & Fiene (2014)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Migaya felis</i> (Marcus & Marcus, 1970)	<i>Nakamigawaia felis</i> (Marcus & Marcus, 1970)	Bahamas: Great Exuma, Stocking Island	Caribbean, this paper, Redfern (2013)
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Panama: Isla Uva	Eastern Pacific. Isla del Caño, Puntarenas, Costa Rica and Panama, this paper
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Panama: Isla Uva	Eastern Pacific. Isla del Caño, Puntarenas, Costa Rica and Panama, this paper

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Ballena National Park, Pta.Uvita	Eastern Pacific, Isla del Caño, Puntarenas, Costa Rica and Panama, this paper
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Guanacaste, Playa Sámara	Eastern Pacific, Isla del Caño, Puntarenas, Costa Rica and Panama, this paper
<i>Navanax aenigmaticus</i> (Bergh, 1893)	<i>Navanax aenigmaticus</i> (Bergh, 1893)	Costa Rica: Ballena National Park, El Tómbolo	Eastern Pacific, Isla del Caño, Puntarenas, Costa Rica and Panama, this paper
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Jamaica: St. Ann Parish, St. Ann's Bay	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Jamaica: St. Ann Parish, St. Ann's Bay	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax gemmatus</i> (Mörch, 1863)	<i>Navanax gemmatus</i> (Mörch, 1863)	Costa Rica: Puerto Vargas, Punta Cahuita	Isla de En medio and Arrecife Gallega, Veracruz, Mexico, this paper, Redfern (2013)
<i>Navanax inermis</i> (Cooper, 1862)	<i>Navanax inermis</i> (Cooper, 1863)	Mexico: Baja California	Los Angeles Bay, Baja California, Mexico, Punta Marzo, Bahía Octavia, Colombia, this paper

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Navanax inermis</i> (Cooper, 1862)	<i>Navanax inermis</i> (Cooper, 1863)	USA: California; Long Beach	Los Angeles Bay, Baja California, Mexico, Punta Marzo, Bahia Octavia, Colombia, this paper
<i>Navanax polyalplos</i> (Gosliner & Williams, 1972)	<i>Navanax polyalplos</i> (Gosliner & Williams, 1972)	USA: California; Long Beach	Gosliner & Williams (1972), Gosliner (1994)
<i>Navanax polyalplos</i> (Gosliner & Williams, 1972)	<i>Navanax polyalplos</i> (Gosliner & Williams, 1972)	Mexico: Bahia San Carlos	Gosliner & Williams (1972), Gosliner (1994)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Australia: Orpheus Island	Australia, this paper, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Philippines: Luzon Island. Batangas	Australia, this paper, Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	Malaysia: "Pinapple Point"	Australia, this paper. Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	USA: Guam, Merizo	Australia, this paper. Rudman (1978)
<i>Odontoghlaja guamensis</i> Rudman, 1978	<i>Odontoghlaja guamensis</i> Rudman, 1978	USA: Guam, Merizo	Australia, this paper. Rudman (1978)
<i>Odontoghlaja mosaica</i> Gosliner, 2011	<i>Odontoghlaja mosaica</i> Gosliner, 2011	Madagascar: IlesRadama, Nosy Kalakajoro	Gosliner (2011)
<i>Philinopsis coronata</i> Gosliner, 2011	<i>Philinopsis coronata</i> Gosliner, 2011	Philippines: Luzon, Batangas, Mainit Point	Gosliner (2011)
<i>Philinopsis</i> cf. <i>cteuophthoraphaga</i> Gosliner, 2011	<i>Philinopsis</i> cf. <i>cteuophthoraphaga</i> Gosliner, 2011	Philippines: off shore Ambil Island	Gosliner (2011)
<i>Philinopsis cyanea</i> (Martens, 1897)	<i>Philinopsis cyanea</i> (Martens, 1897)	Ecuador: Galapagos Islands, Isabela Island, Tagus Cove	Yonow (1994), Rudman (2005)
<i>Philinopsis depicta</i> (Renier, 1807)	<i>Philinopsis depicta</i> (Renier, 1807)	Mediterranean	Spain, this paper. Pruvot-Fol (1954), Martinez et al. (1993)
<i>Philinopsis depicta</i> (Renier, 1807)	<i>Philinopsis depicta</i> (Renier, 1807)	Spain	Spain, this paper. Pruvot-Fol (1954), Martinez et al. (1993)
<i>Philinopsis falciphallus</i> Gosliner, 2011	<i>Philinopsis falciphallus</i> Gosliner, 2011	Philippines: Luzon, Batangas, Balayan Bay, Matotomngil Point	Gosliner (2011)
<i>Philinopsis falciphallus</i> Gosliner, 2011	<i>Philinopsis falciphallus</i> Gosliner, 2011	Philippines: Luzon, Batangas Bay. Mainit Bubbles	Gosliner (2011)

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Precedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	Australia: Lizard Island	
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	Fiji Islands: Yasawa Group, Sawa-l-Lau	
<i>Philinopsis gardineri</i> (Eliot, 1903)	<i>Philinopsis gardineri</i> (Eliot, 1903)	USA: Guam, Merizo	
<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	Australia: Lizard Island	
<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	<i>Philinopsis lineolata</i> (H. & A. Adams, 1954)	Australia: Lizard Island	
<i>Philinopsis orientalis</i> (Baba, 1949)	<i>Philinopsis orientalis</i> (Baba, 1949)	Marshall Islands: Kwajalein Atoll.	Okinawa, Japan, this paper
		Bigej-Meck reef	
<i>Philinopsis orientalis</i> (Baba, 1949)	<i>Philinopsis orientalis</i> (Baba, 1949)	Philippines: Luzon, Batangas, Maricaban Island, Bethlehem	Okinawa, Japan, this paper
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja anneae</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja anneae</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Spinoaglaja aeci</i> (Ortea & Espinosa, 2001) / <i>Spinoaglaja anneae</i> (Ornelas-Gatdula & Valdés, 2012)	<i>Philinopsis petra</i> Marcus, 1976	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2012), Redfern (2013)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Australia: Lizard Island	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Philippines: Luzon, Batangas, Balayan Bay, Seafari beach	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Vanuatu: Espiritu Santo Island	Rudman (1972)
<i>Philinopsis pilsbryi</i> (Eliot, 1900)	<i>Philinopsis pilsbryi</i> (Eliot, 1900)	Vanuatu: Espiritu Santo Island	Rudman (1972)
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2007	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2008	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2009	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis bagaensis</i> Ortea, Moro & Espinosa, 2010	<i>Philinopsis pusa</i> (Ev. Marcus & Er. Marcus, 1966)	Bahamas: Great Exuma, Stocking Island	Ortea <i>et al.</i> (2007), Ortea <i>et al.</i> (2012)
<i>Philinopsis reticulata</i> (Eliot, 1903)	<i>Philinopsis reticulata</i> (Eliot, 1903)	Australia: Lizard Island	
<i>Philinopsis reticulata</i> (Eliot, 1903)	<i>Philinopsis reticulata</i> (Eliot, 1903)	Australia: Lizard Island	

Name	Name given by Camacho-Garcia <i>et al.</i> (2014)	Procedence (Camacho-Garcia <i>et al.</i> , 2014)	Origin of data
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Australia: Lizard Island	Lizard Island, Australia, this paper, Pittman & Fiene (2014a)
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Australia: Lizard Island	Pitman & Fiene (2014a)
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Palau	Pitman & Fiene (2014a)
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Papua New Guinea	Pitman & Fiene (2014a)
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Vanuatu: Espiritu Santo Island	Pitman & Fiene (2014a)
<i>Philiuopsis speciosa</i> Pease, 1860	<i>Philiuopsis speciosa</i> Pease, 1860	Vanuatu: Espiritu Santo Island	Pitman & Fiene (2014a)
<i>Philiuopsis</i> sp.	<i>Philiuopsis</i> sp.	Philippines: Batangas, Mabini, Anilao Harbor	
<i>Aglajidae</i> species 1	<i>Aglajidae</i> species 1	Australia: Lizard Island	
<i>Aglajidae</i> species 1	<i>Aglajidae</i> species 1	Australia: Lizard Island	
<i>Aglajidae</i> species 2	<i>Aglajidae</i> species 2	Australia: Lizard Island	
<i>Aglajidae</i> species 2	<i>Aglajidae</i> species 2	Australia: Lizard Island	
<i>Noalda exigua</i> (Hedley, 1912)			Burn & Thompson (1998)
<i>Pseudophiline hayashii</i> Habe, 1976			Okutani (2000)
<i>Nakanigawata spiralis</i> Kuroda & Habe, 1961			Sasaki (2008)